Test Plan Document

Module Name/Internal ID: ASMD Multiplier

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# Revision

| Rev | Comments | Date | Approval: Team/Date |
| --- | --- | --- | --- |
| 1.0 | Initial Creation |  |  |

# Required Documents

| ID | Name | Revision |
| --- | --- | --- |
| ASMD | https://ieeexplore.ieee.org/document/753681 |  |

# Supplemental Documents

| ID | Name | Revision |
| --- | --- | --- |
|  |  |  |

# Acronyms

| Abbreviation | Definition |
| --- | --- |
| ASMD | Asynchronous State Machine and Datapath |

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# Scope

This document describes in detail, the test plan and test results for the ASMD Multiplier module.

# Functional Verification

ASMD Multiplier\_TP001: Verify that the module implements the interfaces described in the following table:

Verifies: ASMD Multiplier\_F001

Methods: visual inspection, compilation warnings, synthesis.

Results:

| Port | Direction | Width | Description |
| --- | --- | --- | --- |
| product | output | 8’b1 | Output product signal |
| ready | output | 1’b1 | Output ready signal |
| word0 | input | 4’b1 | Input 1st multiplier value |
| word1 | input | 4’b1 | Input 2nd multiplier value |
| start | input | 1’b1 | Input start signal |
| clk | input | 1’b1 | Input clock signal |
| reset | input | 1’b1 | Input reset signal |

ASMD Multiplier\_TP002: Verify that the module implements the parameters described in the following table:

Verifies: ASMD Multiplier\_F002

Methods: visual inspection, compilation warnings, synthesis.

Results:

| Name | Default Value | Description |
| --- | --- | --- |
| word\_length | 4 | Input word size in bits |

ASMD Multiplier\_TP003:

Sequence:

1. Assert start
2. Deassert ready
3. Calculate product of word0 \* word 1
4. When multiplication is complete assert ready
5. Output the product and verify for correct data

Verifies: ASMD Multiplier\_F003.

Methods: simulation.

Results:

ASMD Multiplier\_TP004:

Sequence:

1. Assert reset
2. Assert ready
3. Assign 0 to product

Verifies: ASMD Multiplier\_F004.

Methods: simulation.

Results: